LITTLE COLORADO RIVER BASIN

09386300 LITTLE COLORADO RIVER BELOW ZION RESERVOIR, NEAR ST. JOHNS, AZ

LOCATION.--Lat 34°36'17", long 109°29'19", in SE_{1/4}NW_{1/4} sec. 21, T.14 N., R.27 E., Apache County, Hydrologic Unit 15020002, on left bank 0.50 mi downstream from Zion Reservoir, 10 mi northwest of St. Johns.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--Sept. 1998 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,530 ft above sea level, from topographic map.

REMARKS.—Records fair, except for estimated daily discharges, which are poor. Flow regulated by many small reservoirs - combined capacity, about 15,500 acre-ft. Diversions for irrigation of about 6,700 acres above station. Published under station number 09386100, from Sept. 1998 to Sept. 30, 2003.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,470 ft³/s Sept. 11, 2002, gage height, 11.84 ft, from an extension of the rating curve based on the weir equation for submerged weir flow. Minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 14	2330	*267	*5.90

Minimum daily discharge, no flow for many days.

	DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004 DAILY MEAN VALUES											
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.5	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00		0.00	0.00		0.00		0.00		0.00	0.00	
TOTAL	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.67	0.00
MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00
MAX	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116	0.00
STATIST	ICS OF MO	ONTHLY MEA	AN DATA F	OR WATER Y	EARS 1998	- 2004,	BY WATER	YEAR (WY)				
MEAN	0.54	0.04	0.25	0.37	0.15	0.08	0.03	0.00	0.00	0.09	10.4	32.8
MAX	3.07	0.26	0.86	0.79	0.43	0.25	0.16	0.00	0.00	0.39	60.0	196
(WY)	2002	2003	2003	2000	2003	2000	2000	1999	2000	1999	2001	2002
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	2003	2002	2000
SUMMARY	STATIST	ICS	FOR	2003 CALEN	DAR YEAR	F	OR 2004 WA	TER YEAR		WATER YEAR	S 1998 -	2004
ANNUAL '	TOTAL			41.84			58.69					
ANNUAL I	MEAN			0.11			0.16			3.71		
	ANNUAL N									16.5		2002
	ANNUAL M									0.13		2000
	DAILY M			2.0	Jan 6		39	Aug 15		2140		
	DAILY MEA				Apr 1			Oct 1			Sep 11	
		/ MINIMUM			Apr 1			Oct 1		0.00	Sep 11	1998
	RUNOFF (A			83			116			2690		
	ENT EXCER			0.45			0.00			0.43		
	ENT EXCE			0.00			0.00			0.00		
JU FERC.	DACEI			0.00			0.00			0.00		

e Estimated

PERIOD OF RECORD.--September 1998 to current year.

INSTRUMENTATION. -- Automatic pumping sampler installed September 1998.

REMARKS.—Suspended-sediment discharge computed from sample data and by interpretation of a sample based suspended-sediment and streamflow discharge curve.

		SUS	SPENDED SI	EDIMENT DI	SCHARGE,	TONS PER D	AY, WATER :		BER 2001 '	TO SEPTEMB	ER 2002	
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0.17	<0.01	<0.01						
2				0.08	<0.01	<0.01						
3				0.05	<0.01	0.01						
4			<0.01	0.07	e0.02	0.01						
5			<0.01	0.04	0.02	0.03						
6			0.01	0.05	<0.01	0.05						
7	386		0.01	0.07	<0.01	0.06						
8	85		0.02	0.10	<0.01	0.03						
9	5.3		0.02	0.11	e0.02	0.02						<0.01
10	0.15		0.02	0.17	e0.02	0.01						402
11	0.04		0.02	0.19	e0.02	<0.01						13400
12	0.02		0.03	0.07	e0.02	<0.01						65600
13	<0.01		0.02	0.05	e0.03	<0.01						16800
14	<0.01		0.01	0.02	e0.03	<0.01						675
15	<0.01		e0.01	0.02	e0.03							100
16	<0.01		e0.01	0.02	e0.04							1.4
17	<0.01		e0.04	0.03	0.06							1.7
18	<0.01		e0.04	0.02	e0.02							1770
19			e0.04	<0.01	e0.03					0.76		29400
20			0.02	e0.03	e0.03					0.47		5790
20			0.02	00.05	00.05					0.47		3730
21			0.04	e0.02	e0.02					0.08		371
22			0.02	e0.03	0.05					<0.01		64
23			0.01	e0.02	0.04							14
24			<0.01	e0.01	e0.02							2.7
25			<0.01	e0.01	e0.02							0.46
23			V0.01	C0.01	C0.02							0.40
26			e0.03	e0.01	e0.01							0.14
27			e0.04	e0.01	e0.01					0.29		0.03
28			e0.14	<0.01	e0.01					0.03		<0.01
29			0.15	<0.01						< 0.03		<0.01
30			0.13	<0.01						<0.01		<0.01
31			0.11	<0.01								
2.1			0.11	<0.01								
TOTAL				1.52	0.63							
MEAN				0.05	0.02							
MAX				0.19	0.06							
MIN				0.01	0.01							

 $[\]mbox{<}$ Actual value is known to be less than the value shown e $\mbox{\ \ Estimated}$

SUSPENDED SEDIMENT DISCHARGE, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	<0.01	<0.01	0.07	<0.01	0.07	e0.13						
2	<0.01	<0.01	0.07	<0.01	0.05	e0.12						
3	<0.01	<0.01	0.89	0.01	0.01	e0.10						
4		<0.01	0.69	0.05	<0.01	0.07						
5		<0.00	0.29	e0.15	0.01	0.04						
6		<0.01	0.30	e0.48	0.01	0.03						
7		<0.01	0.28	e0.46	0.01	0.03						
8		<0.01	0.26	e0.34	0.02	0.02						
9		<0.01	0.21	e0.30	0.02	0.01						
10		0.02	0.17	e0.24	0.04	<0.01						
11		<0.01	0.15	0.18	0.05	<0.01						
12		<0.01	0.13	0.14	0.06	<0.01						
13		<0.01	0.12	0.12	0.06	<0.01						
14		<0.01	0.13	0.15	e0.10	<0.01						
15		<0.01	0.15	0.13	e0.13	<0.01						
16		<0.01	0.12	0.09	0.10	<0.01						
17		<0.01	0.11	0.08	0.07	<0.01						
18	1.3	<0.01	0.13	0.07	0.07	<0.01						
19	0.03	<0.01	0.17	0.06	0.12	<0.01						
20	<0.01	<0.01	0.07	0.06	0.10	<0.01						
21	<0.01	e0.01	0.06	0.08	0.08	<0.01						
22	<0.01	e0.01	0.04	0.08	0.05	<0.01						
23	<0.01	e0.01	0.03	0.07	0.03	<0.01						
24	<0.01	e0.02	0.02	0.09	0.03	<0.01						
25	<0.01	e0.02	0.01	0.08	0.02	<0.01						
26	<0.01	0.02	<0.01	0.07	0.06	<0.01						
27	<0.01	0.03	<0.01	0.07	0.05	<0.01						
28	<0.01	0.03	<0.01	0.07	0.09	<0.01					0.01	
29	<0.01	0.04	<0.01	0.08		<0.01						
30	<0.01	0.05	<0.01	0.07		<0.01						
31	<0.01		<0.01	0.07		<0.01						
TOTAL		0.44	4.73	3.96	1.52	0.77						
MEAN		0.01	0.15	0.13	0.05	0.02						
MAX		0.05	0.89	0.48	0.13	0.13						
MIN		0.00	0.01	0.01	0.01	0.01						

Actual value is known to be less than the value shown ${\tt Estimated}$

09386300 LITTLE COLORADO RIVER BELOW ZION RESERVOIR NEAR ST. JOHNS, AZ - CONTINUED. WATER-QUALITY RECORDS

SUSPENDED SEDIMENT DISCHARGE, TONS PER DAY, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12			<0.01									
13												
14			<0.01								601	
15											1300	
16											74	
17											0.20	
18											<0.01	
19											<0.01	
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
TOTAL												
MEAN												
MAX												
MIN												

< Actual value is known to be less than the value shown

SUSPENDED SEDIMENT CONCENTRATION, MILLIGRAMS PER LITER, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				54	9.0	77						
2				49	10	71						
3				47	11	67						
4			1.0	46	21	63						
5			11	45	15	60						
6			13	42	13	58						
7	515		13	41	13	57						
8	640		13	42	17	56						
9	233		13	42	33	54						4.0
10	69		14	43	37	53						443
11	31		14	43	38	53						3920
12	13		15	41	43	50						11300
13	10		15	37	50	32						5080
14	10		15	35	52	19						1700
15	10		15	33	53							903
16	10		16	31	56							573
17	9.0		16	31	57							232
18	4.0		15	31	57							1700
19	4.0		15	31	62					112		8140
20			14	28	65					134		3700
20			14	28	65					134		3 700
21			14	25	76					103		1340
22			14	21	75					61		808
23			14	17	78							517
24			13	14	79							269
25			14	11	81							152
26			18	9.0	84							96
27			30	8.0	86					37		52
28			48	8.0	84					35		23
29			53	8.0						21		14
30			54	8.0						10		10
31			54	9.0								
TOTAL				929.0	1357.0							
MEAN				329.0	48							
MAX				54	86							
MIN				8.0	9.0							
1*1 ± 1V				0.0	9.0							

09386300 LITTLE COLORADO RIVER BELOW ZION RESERVOIR NEAR ST. JOHNS, AZ - CONTINUED. WATER-QUALITY RECORDS

SUSPENDED SEDIMENT CONCENTRATION, MILLIGRAMS PER LITER, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003 DAILY MEAN VALUES

						DAILY	MEAN VAL	JES				
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	14	24	16	69	49						
2	5.0	13	28	16	69	46						
3	1.0	13	96	17	68	43						
4		13	107	22	67	41						
5		13	73	42	68	38						
6		1.3	67	89	67	37						
7		13	64	91	60	35						
8		1.3	63	74	55	34						
9		12	61	65	50	33						
10		15	59	60	46	32						
11		14	58	56	43	31						
12		12	57	53	39	31						
13		12	56	54	35	31						
14		11	56	66	37	31						
15		11	55	63	40	31						
15		1.1	33	63	40	31						
16		11	54	58	40	32						
17		11	53	55	41	32						
18	66	12	51	53	43	32						
19	27	13	54	50	48	33						
20	21	13	44	49	51	34						
0.1	1.0	1.0	2.0	4.5		2.5						
21	19	13	39	47	53	36						
22	17	14	37	46	56	35						
23	17	13	33	46	58	34						
24	17	16	29	51	59	32						
25	17	17	24	54	57	31						
26	16	17	23	57	56	28						
27	16	18	22	62	51	26						
28	16	20	22	65	50	25					10	
29	16	20	21	67		24						
30	15	21	18	68		24						
31	14		17	68		24						
TOTAL		421	1465	1680	1476	1025						
MEAN		14	47	54	53	33						
MAX		21	107	91	69	49						
MIN		11	17	16	35	24						

SUSPENDED SEDIMENT CONCENTRATION, MILLIGRAMS PER LITER, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2												
3												
4												
5												
3												
6												
7												
8												
9												
10												
11												
12			e10									
13												
14			e10								2850	
15											5220	
16											2130	
17											441	
18											e35	
19											e16	
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
TOTAL												
MEAN												
MAX												
MIN												
I-I T IA												

e Estimated